

LCC-Building 654

NEW MODULAR SUPERCOMPUTING FACILITY TO ACCOMMODATE FUTURE GROWTH

LIVERMORE COMPUTING COMPLEX ADDS INFRASTRUCTURE

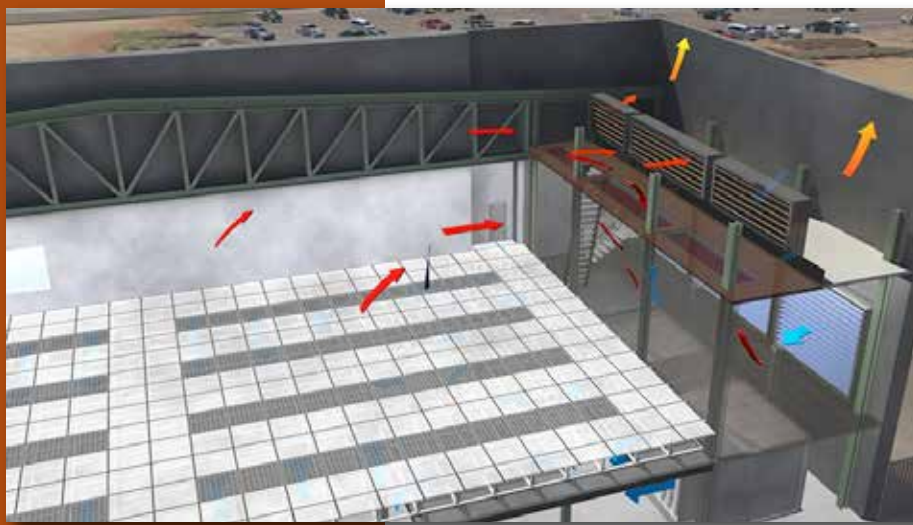
Lawrence Livermore National Laboratory (LLNL) broke ground May 28, 2015, on a modular and sustainable high performance computing (HPC) facility that will provide a flexible infrastructure able to accommodate future

growth in HPC. The building will ensure computer room space suitable for supporting LLNL's Advanced Simulation and Computing (ASC) Program's unclassified HPC systems.

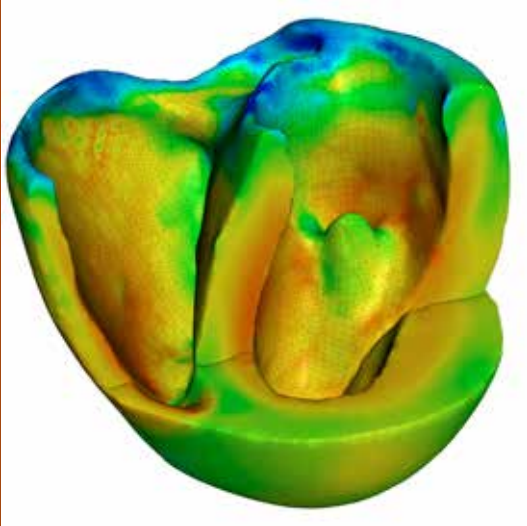
The new dual-level unclassified \$9.7-million building—Building 654—will consist of a 6,000-square foot machine floor flanked on both sides by support space. The main computer structure is flexible in design to allow for possible expansion and to accommodate future computer technology advances. The ceiling height will assure proper forced air circulation and allow for the installation of utilities and HPC systems.

The design also enables future liquid cooling solutions and provides cabling, electrical, plumbing, and fire protection and detection. The building will be able to provide 7.5 megawatts of computational capacity in the future and was designed so that additional power and mechanical resources can be added as HPC technologies evolve. The building's heating, ventilation, and air conditioning systems will meet sustainable design requirements to promote energy conservation.

The new building will address the need for computing space. Computing buildings at Lawrence Livermore range from 10 to 60 years old. These aging structures, most of which were not designed to house large computing systems, have permanent limitations that inhibit upgrades to their electrical and mechanical infrastructures. Addressing these significant structural deficiencies is costly.



NEW INFRASTRUCTURE TO SUPPORT BOTH NATIONAL SECURITY MISSIONS AND SCIENTIFIC AND TECHNICAL APPLICATIONS

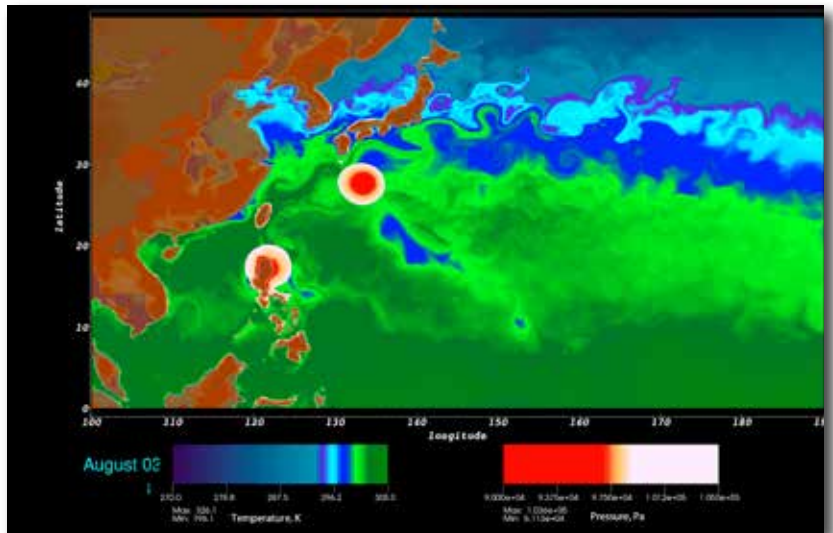


High performance computing at LLNL is more than a single program—it is the oxygen the laboratory breathes.

Supercomputers and facilities support the spectrum of national nuclear security enterprises, including assuring the safety, surety, reliability, and robustness of the nation's nuclear stockpile; investigating weapons' science, performing modeling experiments, addressing non-proliferation and nuclear counterterrorism, and understanding hydrodynamics. Codes and computers developed by the weapons laboratories have been applied to other areas of national security, including projects for the Department of Defense, ignition and future energy production, biomedical research, atmospheric release and climate modeling, and nonproliferation and seismology. Finally, HPC at LLNL spans a myriad scientific and technical applications, including human health, energy and

climate, and industry.

The prediction, with confidence, of the behavior of *any* complex system without calibration, be it the human heart, the climate, or a combustion engine, will benefit from exascale and super-exascale capabilities. Adding Building 654 to the Livermore Computing Complex is one of the many steps being taken by LLNL to deliver on its many missions and research agendas.



FOR MORE INFORMATION

See the ASC at Livermore
Web site:

<https://asc.llnl.gov/>